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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/781,383	02/12/2001	Karel Elbert Kuijk	NL 000045	1640
24737	7590	04/19/2004	EXAMINER	
PHILIPS INTELLECTUAL PROPERTY & STANDARDS			PIZIALI, JEFFREY J	
P.O. BOX 3001			ART UNIT	PAPER NUMBER
BRIARCLIFF MANOR, NY 10510			2673	14

DATE MAILED: 04/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/781,383	KUIJK, KAREL ELBERT
Examiner	Art Unit	
Jeff Piziali	2673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 04 February 2004.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-18 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 12 February 2001 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____.

- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-7, 9-15, 17, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Shimura et al. (US 5,677,705).

Regarding claim 1, Shimura discloses a display device [Fig. 1, 32] comprising a liquid crystal between a first substrate provided with row/selection electrodes [Fig. 1, 29-31] and a second substrate provided with column/data electrodes [Fig. 1, 23-25], the row electrodes and the column electrodes overlapping to define pixels; column drive means [Fig. 1, 22] for driving the column electrodes in conformity with an image to be displayed; and row drive means [Fig. 1, 28] for driving the row electrodes which, in the operating condition, sequentially supply groups of p row electrodes with p mutually orthogonal signals [Fig. 5, $\emptyset(1) - \emptyset(8)$], wherein the mutually orthogonal signals are pulses obtained from at least two types of orthogonal functions having four elementary units of time [Fig. 5, t], within which four elementary units of time one pulse

each time has a first (i.e. 1, for instance) polarity which opposes a second (i.e. -1, for instance) polarity of the other pulses (see Column 1, Line 39 - Column 5, Line 60).

Regarding claim 2, Shimura discloses the orthogonal signals are pulses obtained from orthogonal functions having four elementary units of time, within which four elementary units of time the one pulse having the first (i.e. 1, for instance) polarity which opposes the second (i.e. -1, for instance) polarity of the other pulses each time shifts by one elementary unit of time (see Fig. 5; Column 1, Line 39 - Column 5, Line 60).

Regarding claim 3, Shimura discloses the orthogonal signals are pulses obtained from orthogonal functions having four elementary units of time which, viewed in a time sequence, are situated one after the other (see Fig. 5; Column 1, Line 39 - Column 5, Line 60).

Regarding claim 4, Shimura discloses at least two orthogonal signals have opposed DC contents (see Fig. 5; Column 1, Line 39 - Column 5, Line 60).

Regarding claim 5, Shimura discloses the orthogonal signals are pulses obtained from orthogonal functions having four elementary units of time, in which the elementary units of the orthogonal functions are interwoven (see Fig. 5; Column 1, Line 39 - Column 5, Line 60).

Regarding claim 6, Shimura discloses $p=4$, and in that four orthogonal signals have identical DC contents and four are free from a DC voltage (see Fig. 5; Column 1, Line 39 - Column 5, Line 60).

Regarding claim 7, Shimura discloses the DC content of 2 orthogonal signals of the orthogonal signals having an identical DC content is opposed to that of the two other orthogonal signals (see Fig. 5; Column 1, Line 39 - Column 5, Line 60).

Regarding claim 9, this claim is rejected by the reasoning applied in the above rejection of claim 1.

Regarding claim 10, this claim is rejected by the reasoning applied in the above rejection of claim 2.

Regarding claim 11, this claim is rejected by the reasoning applied in the above rejection of claim 3.

Regarding claim 12, this claim is rejected by the reasoning applied in the above rejection of claim 4.

Regarding claim 13, this claim is rejected by the reasoning applied in the above rejection of claim 5.

Regarding claim 14, this claim is rejected by the reasoning applied in the above rejection of claim 6.

Regarding claim 15, this claim is rejected by the reasoning applied in the above rejection of claim 7.

Regarding claim 17, Shimura discloses the first polarity is a negative polarity (i.e. -1, for instance); and the second polarity is a positive polarity (i.e. 1, for instance) (see Fig. 5; Column 1, Line 39 - Column 5, Line 60).

Regarding claim 18, this claim is rejected by the reasoning applied in the above rejection of claim 17.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 8 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimura et al. (US 5,677,705) in view of Ito et al. (US 6,252,573).

Regarding claim 8, Shimura does not expressly disclose that the row drive means inverts the orthogonal signals after each frame period. However, Ito does disclose inverting orthogonal row signals after each frame period (see Figs. 8A-D; Column 17, Lines 1-65). Shimura and Ito are analogous art because they are from the shared field of LCD device driving methods. Therefore, it would have been obvious to one skilled in the art at the time of invention to use Ito's per-frame inversion technique with Shimura's display device, so as to maintain display brightness and prevent a reduction in contrast.

Regarding claim 16, this claim is rejected by the reasoning applied in the above rejection of claim 8.

Response to Arguments

6. Applicant's arguments filed 4 February 2004 have been fully considered but they are not persuasive. The applicant contends the cited prior art of Shimura et al. (US 5,677,705) fails to teach that the mutually orthogonal signals are obtained from at least two types of orthogonal functions having four elementary units of time, within which four elementary units of time one pulse each time has a first polarity which opposes a second polarity of the other pulses. However, the examiner respectfully disagrees. Shimura discloses the mutually orthogonal signals [Fig. 5, $\emptyset(1)$ - $\emptyset(8)$ for instance], wherein the mutually orthogonal signals are pulses obtained from at least two types of orthogonal functions [i.e. $W(i,t)$] having four elementary units of time [Fig. 5, t], within which four elementary units of time one pulse each time has a first (i.e. 1, for instance) polarity which opposes a second (i.e. -1, for instance) polarity of the

other pulses (see Column 1, Line 39 - Column 5, Line 60). Note: Each illustrated time segment [Fig. 5, $t = 1, 2, 3, 4, 5, 6, 7, 8$] may be indiscriminately divided into an infinite number of sub-segments of time. Therefore, for example, time segment $t=3$ may be divided into four sub-segments $t3-1, t3-2, t3-3$, and $t3-4$ (constituting merely a labeling convention). During all four sub-segments (i.e. elementary units of time), pulse $\emptyset(1)$ has a positive polarity opposing other pulses $\emptyset(3)-\emptyset(6)$. By such reasoning, rejection of the claims is deemed necessary, proper, and thereby maintained at this time.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Piziali whose telephone number is (703) 305-8382. The examiner can normally be reached on Monday - Friday (6:30AM - 3PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (703) 305-4938. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



J.P.
13 April 2004



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